

THE LIFE AND LEGACY OF PROFESSOR A. K. MD. E. SALEH: A STATISTICAL LEGEND (1932–2023)

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Professor A. K. Md. Ehsanes Saleh, Emeritus Professor and Distinguished Research Professor in the School of Mathematics and Statistics at Carleton University, Ottawa, Canada, was born on January 1, 1932, in Munshigonj, Dhaka, Bangladesh. He earned his B.Sc. degree (ranking sixth in merit with distinction) in 1951 and his M.Sc. degree in Statistics in 1953 from the University of Dhaka, where Professor Dr. Q. M. Hossain served as the Head of the Department of Statistics. After eight years of service with the Central Statistical Office and the Ministry of Defense, Government of Pakistan, he pursued further studies at the University of Western Ontario (UWO), London, Canada. There, he completed his Master's degree in 1962 and his Ph.D. in 1965, both under the supervision of the late Professor Mir Maswood Ali in the newly established graduate program in Statistics within the Department of Mathematics. Notably, he became the first graduate degree holder in Statistics from UWO. It is also remarkable that Professor Saleh immediately published two pioneering papers in *Order Statistics* in the *Annals of Mathematical Statistics* (1966), based on his Master's and Ph.D. theses. Throughout his career, he made seminal contributions to numerous fields of statistics and has served the profession with distinction. We are privileged to have the opportunity to write about Professor Saleh in this special volume of the *Journal of Statistical Research*, published by the Institute of Statistical Research at the University of Dhaka, Bangladesh.

After completing his degrees at the University of Western Ontario, Professor Saleh transitioned from a career in government to academia. He began as a Lecturer in Statistics at UWO, where he taught from 1964 to 1966. In 1966, he joined Carleton University as an Assistant Professor in the Department of Mathematics and Statistics. The following year, he was appointed Associate Professor in the Department of Mathematics at Simon Fraser University (1967–1968) before returning to Carleton University in the fall of 1968. He was promoted to Full Professor in 1978. Professor Saleh is the founder of the graduate program in Statistics at Carleton University, where he supervised his first Ph.D. student in 1971. He also served as Director of the Ottawa-Carleton Institute of Graduate Studies and Research from 1991 to 1993. After retiring in 1997, he continued his academic contributions as a Distinguished Research Professor at Carleton University. He is recognized as one of the

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Figure 1: Professor A. K. Md. Ehsanes Saleh

four leading figures in statistics and probability within the School of Mathematics and Statistics at Carleton University.

Professor Saleh has made groundbreaking contributions in several areas of statistics, including empirical Bayes estimation, preliminary tests, shrinkage estimation in both parametric and non-parametric settings, robust statistics, order statistics, L-estimation, Ridge regression, and autoregression quintiles. He is widely recognized as a pioneer in the application of preliminary tests and shrinkage estimation in nonparametric settings. Over the course of his career, he has authored and co-authored nearly 200 scientific papers, published in prestigious international journals such as *Annals of Mathematical Statistics*, *Annals of Statistics*, *Journal of the Royal Statistical Society, B, Statistician (JRSS, D)*, *Journal of Multivariate Analysis*, *Journal of the American Statistical Association*, *Journal of Nonparametric Statistics*, *Sankhya*, *Metrika*, *Journal of the Japan Statistical Society*, *Journal of Statistical Planning and Inference*, *Communications in Statistics – Theory & Methods*, *Probability and Statistics Letters*, *Calcutta Statistical Association Bulletin*, and many others.

Professor Saleh has supervised more than 12 Ph.D. students, all of whom have excelled in their respective fields. He has been a steadfast mentor to young statisticians. Some of his co-authors include world-class statisticians such as D. A. S. Fraser, P. K. Sen, Malay Ghosh, T. Kubokawa, Hira L. Koul, C. Robert, Shahjahan Khan, Syed E. Ahmed, M. S. Srivastava, Mohammad Ahsanullah, among others. He has visited numerous prestigious institutions, including the University of Toronto, Stanford University, MIT, University of California Berkeley, Michigan State University, Bowling Green State University, Charles University (Prague), Banach Centre (Poland), Kuwait University, University of South Queensland, Monash University (Australia), University of Jahangirnagar, and the University of Dhaka in Bangladesh, among many others.

Professor Saleh served as Editor-in-Chief of the *Journal of Statistical Research* for over a decade and has been an associate editor for several renowned international statistical journals. Since the be-

gining of his teaching career in 1966, he has been actively involved with leading statistical organizations such as the ASA, IMS, RSS, and BSA. He has organized numerous national and international conferences and symposia and has been a keynote and invited speaker at conferences, institutions, and events across the world.

Professor Saleh has made significant contributions to academic literature through books and edited volumes. He is the author of *Theory of Preliminary Test and Stein-Type Estimation with Applications* (2006) and has co-authored four additional books: *An Introduction to Probability and Statistics* (2nd edition) with V. K. Rohatgi, *Statistical Inference for Models with Multivariate t-Distributed Errors* (2014) with Mohammad Arashi and S. M. M. Tabatabaey, *Theory of Ridge Regression Estimation with Applications* (2019) with M. Arashi, Mina Norouzirad, and B. M. Golam Kibria, and *Rank-based Methods for Shrinkage and Selection* (2022) with Mohammad Arashi, Resve A. Saleh, and Mina Norouzirad. These books have gained significant attention from researchers worldwide.

Professor Saleh has also edited several important volumes, including:

- *Data Analysis from Statistical Foundations* (A Festschrift in Honour of the 75th Birthday of D.A.S. Fraser), NOVA Publisher
- A special volume of the *Journal of Statistical Research* in honor of the 80th birthday of C.R. Rao
- A special volume of the *Journal of Nonparametric Statistics* on “Regression Quantile”
- *Nonparametric Statistics and Related Topics*, Proceedings of the International Symposium on Nonparametric Statistics and Related Topics, North-Holland Publishers
- *Proceedings of the International Symposium on Statistics and Related Topics* (with M. Csorgo, D.A. Dawson, and J.N.K. Rao), North-Holland
- *Proceedings of the 3-Day Symposium on Statistics and Related Topics*, Carleton Mathematics Series, 1974

Professor Saleh has received numerous prestigious awards and fellowships in recognition of his exceptional contributions to the field of statistics. In 2005, the Islamic Society of Statistical Sciences (ISOSS) awarded him the Gold Medal for his extensive scholarly work. He is an elected member of the International Statistical Institute (ISI) and a fellow of the Royal Statistical Society, American Statistical Association, Institute of Mathematical Statistics, and the Bangladesh Academy of Sciences. In 1992-93, he served as the third Eugene Lukacs Distinguished Professor at Bowling Green State University. The following year, the Bangladesh Statistical Association awarded him the Q.M. Hossain Gold Medal for his groundbreaking research and pioneering contributions to various areas of statistical science. Professor Saleh was also co-recipient of the Ogawa Award in 1991, alongside T. Kubokawa, for the best paper published in the *Journal of Japanese Statistical Society*. In 1999, he received the Gold Medal and a certificate from ISOSS and the Islamic Educational, Scientific & Cultural Organization (ISESCO) for his outstanding research in statistics within the Organization of Islamic Conference member states. That same year, he was honored with an

Award of Excellence by the Canada Bangladesh Muslim Community in Ottawa for his remarkable contributions to mathematical statistics. Professor Saleh's exceptional achievements have not only elevated the field of statistics but have also brought great honor to his home country. In 2000, the Federation of Bangladesh Associations in North America (FOBANA) bestowed upon him the "Pride of Bangladesh" award during their 14th Annual Meeting in Toronto, recognizing him as the most outstanding statistician and academician of Bangladesh.

Professor Saleh's contributions to Carleton University and the broader statistical community are exceptional. He is undoubtedly an icon of Bangladesh's statistical community. Even in the final days of his life, he remained committed to his research and continued to serve the statistical field. His legacy will endure as that of a man of great distinction and far-reaching vision in the realm of statistics. He brought immense reputation to Carleton University and to his home country, Bangladesh, and we are immensely proud of his achievements.

We sincerely thank the authors of this special issue for their valuable contributions and the editorial board of the *Journal of Statistical Research* (JSR) for dedicating this issue in honor of Professor A. K. Md. E. Saleh. We are deeply honored to write this life sketch of Professor Saleh.

Professor J. N. K. Rao was a colleague of Professor Saleh for 50 years (1973-2023). He was fortunate to have known him closely and appreciated his suggestions and advice during that period. He had several fruitful and stimulating discussions on research topics of mutual interest. Professor Saleh was a great organizer of symposia and conferences. Professor Rao was fortunate to have collaborated with him on a major international conference held at Carleton University in 1980 attended by who is who in statistics and probability, including CR Rao, R.R. Bahadur, J. Kiefer, M. Rosenblatt, G. Kallianpur, E. Parzen and H.O. Hartley. The Proceedings of that conference was published by North-Holland in 1981: *Statistics and Related Topics: Proceedings*. It is truly remarkable that Professor Saleh wrote three books while he was having serious health problems. His last book (jointly with his son and former students) on rank-based methods for shrinkage and selection provides an exciting new approach to making robust inferences.

Professor Kibria has had a long association with Professor Saleh. He was his research student when he started his Master's in Statistics at Carleton University in 1991. He is deeply grateful for Professor Saleh's superb guidance and encouragement to continue his research on "ridge regression," which ultimately led to many collaborative research papers and a book titled *Theory of Ridge Regression Estimation with Applications* (2019), co-authored with him.

With deep sadness, we announce the passing of Professor Saleh on September 3, 2023, at the age of 91. He passed away peacefully, surrounded by his loving family. He is survived by his wife, two sons, one daughter, and several grandchildren. Professor Saleh will be remembered as a man of great distinction and foresight in the field of statistics. His legacy will live on through his magnificent research contributions and the many students, friends, and colleagues whose lives he touched.

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